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SQUIRE, SANDERS & DEMPSEY L.L.P
600 HANSEN WAY
PALO ALTO, CA 94304-1043

EXAMINER
EHICHIOYA, FRED I

ART UNIT	PAPER NUMBER
2172	

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7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/827,969	CHEN ET AL.	
	Examiner	Art Unit	
	Fred I. Ehichioya	2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5, 6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The application has been examined.

2. Claims 1 – 50 are pending in this office action.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 4, 7, 8, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 34, 35, 45 are rejected under 35 U.S.C 102(b) as been anticipated by U.S. Patent 5,734,887 issues to Denis G. Kingberg et al (hereinafter "Kingberg").

Regarding claim 1, Kingberg teaches modeling a first plurality of information entities, including a first entity

and a second entity, using a first logical model (see FIG.4, column 6, lines 40 – 59);

converting said logical model into a first derived subject model (see column 4, lines 57 – 58);

converting said first derived subject model into a first physical model (see column 18, lines 43 – 46 and lines 60 – 62); and

mapping at least one relationship between said first entity and said second entity of said first plurality of information entities based upon said first physical model (see FIG.4, column 6, lines 59 – 67 and column 7, lines 1 – 9).

Claims 10 is essentially the same as claim 1 except that it sets forth the claimed invention as a computer product rather than a method for managing information and therefore rejected for the same reasons as applied hereinabove.

Regarding claims 2, 11, 21 and 29 Kingberg teaches first logical model comprising at least one of a central concept entity, a static attribute entity, a dynamic attribute entity, an activities/events entity (see column 19, lines 60 – 67 and column 20, lines 1 – 23).

Regarding claims 3, 12, 22 and 30, Kingberg teaches said first derived subject model comprising at least one of a core component, and at least one of a plurality of customized group components (see column 6, lines 57 – 65).

Regarding claims 4, 13, 23 and 31, Kingberg teaches analyzing said first plurality of information entities using applications
based upon input of said first logical model (see column 6, lines 44 – 49 and column 20, lines 26 – 32).

Regarding claims 7, 16, 26 and 34, Kingberg teaches modeling a second plurality of information entities, including a first entity and a second entity, using a second logical model (see column 7, lines 32 – 40, column 20, lines 42 – 45 and column 29, lines 20 – 30);

converting said second logical model into a second derived subject model (column 7, lines 40 – 43 and column 20, lines 53 – 57);

converting said second derived subject model into a second physical model (see column 7, lines 47 – 49); and

mapping at least one relationship among said first entity and said second entity of said second plurality of information entities based upon said second physical model (see column 7, lines 53 – 55).

Regarding claims 8, 17, 27 and 35, Kingberg teaches analyzing said first plurality of information entities and said second
plurality of information entities using applications based upon input from said first logical model and said second logical model, said applications deriving new relationships between said first plurality of information entities and said second plurality of information entities (see FIG.4, column 6, lines 40 – 59, column 7, lines 32 – 55 and column 20, lines 26 – 32).

Regarding claim 18, Kingberg teaches a first central concept entity (see column 19, line 60);

a first static attribute entity (see FIG.8A, column 19, line 64);

a first dynamic attribute entity (see column 20, lines 3 – 5); and

a first activities/events entity, wherein said first central concept entity, said first static attribute entity, said first dynamic attribute entity, and said first activities/events entity are related by a first subject model (see FIG. 8A – 8C, column 19, lines 60 – 67 and column 20, lines 1 – 23).

Regarding claim 19, Kingberg teaches a second central concept entity (see column 26, line 51);

a second static attribute entity (see FIG.8A);

a second dynamic attribute entity (see FIG.8B); and

a second activities/events entity, wherein said second central concept entity, said second static attribute entity, said second dynamic attribute entity, and said second activities/events entity are related by a second subject model (see FIG.8A – 8C).

Regarding claim 20, Kingberg teaches a processor (see column 29, line 24); and

a memory (see column 29, lines 25 – 28);

wherein said processor is operative to model a first plurality of information entities, including a first entity and a second entity, using a first logical model; said

processor is further operative to convert said logical model into a first derived subject model; and to convert said first derived subject model into a first physical model; and thereupon to map at least one relationship between said first entity and said second entity of said first plurality of information entities based upon said first physical model; wherein said first entity and said second entity are stored in said memory (see FIG.4; column 6, lines 40 – 67, column 7, lines 1 – 9, column 18, 43 – 46, lines 60 – 62 and column 29, line 24).

Regarding claim 28, Kingberg teaches a processor (see column 29, line 24);

a memory (see column 29, lines 25 – 28); and

a display; wherein said processor causes said display (see column 29, line 24 and lines 29 – 30) to:

display a first logical model, said first logical model modeling a first plurality of information entities, including a first entity and a second entity (see FIG.4, FIG.8A – 8C and column 6, lines 40 – 59);

display a first derived subject model, said first derived subject model obtained from said logical model (see column 18, lines 43 – 46 and lines 60 – 62);

display a first physical model, said first physical model obtained from said first derived subject model; wherein at least one relationship between said first entity and

said second entity of said first plurality of information entities exists based upon said first physical model (see FIG.4, column 60 – 67 and column 20, lines 1 – 20).

Regarding claim 45, Kingberg teaches a processor (see column 29, lines 24);

a memory (see column 29, lines 25 – 28); and

a display; wherein said processor causes said display (see column 29, line 24 and lines 29 – 30) to:

display a first logical model, said first logical model modeling a first plurality of information entities, including a first entity and a second entity (see FIG.4, FIG.8A 8C and column 6, lines 40 – 59);

display a first physical model, said first physical model obtained from said first logical model; wherein at least one relationship between said first entity and said second entity of said first plurality of information entities exists based upon said first physical model (see FIG.4, column 6, lines 59 – 67 and column 7, lines 1 – 9).

Claims 46, 47, 48, 49, 50 are rejected under 35 U.S.C 102(b) as been anticipated by U.S. Patent 6,490,590 issued to Ronald Fink (hereinafter "Fink").

Regarding claim 46, Fink teaches retrieving metadata information from a repository (see column 6, lines 7 – 10 and column 7, lines 4 – 7);

creating at least one of a plurality of commands based upon said metadata information (see column 6, lines 10 – 18);

sending said at least one of a plurality of commands to a database (see column 5, lines 20 – 22);

providing information received from said database responsive to said at least one of a plurality of commands to at least one of a plurality of applications (see column 5, lines 11 – 19); and

creating at least one of a plurality of reports from a result of said at least one of a plurality of applications (see column 8, lines 2 – 5).

Regarding claim 47, Fink teaches said metadata information comprises at least one of a model, a mapping, a derived attributes definition, and a profiling definition (see column 5, lines 46 – 61).

Claims 48 is essentially the same as claim 46 except that it sets forth the claimed invention as a computer product rather than a method and therefore rejected for the same reasons as applied hereinabove.

Regarding claim 49, Fink teaches a processor (see column 3, lines 51 – 54); and

a memory (see column 3, lines 54 – 55);

wherein said processor is operative to retrieve metadata information from a repository (see column 6, lines 7 – 10); create at least one of a plurality of commands based upon said metadata information (see column 4, lines 4 – 6 and column 6, lines 10 – 18); send said at least one of a plurality of commands to a database (see column 5, lines 20 – 22); provide information received from said database responsive to said at least one of a plurality of commands to at least one of a plurality of applications (see

column 5, lines 11 – 19); and create at least one of a plurality of reports from a result of said at least one of a plurality of applications (see column 8, lines 2 – 5).

Regarding claim 50, Fink teaches a processor (see column 3, lines 51 – 54);

a memory (see column 3, lines 54 – 55); and

a display; wherein said processor causes said display to display at least one of a plurality of reports from a result of at least one of a plurality of applications acting upon information received from a database responsive to at least one of a plurality of commands created based upon a metadata information retrieved from a repository (see column 4, lines 4 – 6, column 5, lines 11 – 22, column 6, lines 7 – 8 and column 8, lines 2 – 5).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5, 14, 24 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingberg in view of The OLAP COUNCIL, OLAP and OLAP Server Definitions, The OLAP Council, Copyright 1995 (hereinafter "OLAP").

Regarding claims 5, 14, 24 and 32, Kingberg does not explicitly teach said applications comprising at least one of statistics, a report generator, an On Line Analytical Processing (OLAP) package, and a data mining application.

OLAP teaches said applications comprising at least one of statistics, a report generator, an On Line Analytical Processing (OLAP) package, and a data mining application (see pages 1 – 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Kingberg with the teaching of OLAP wherein users gain insight into the meaning contained in databases by using OLAP objective of multi-dimensional analysis. The motivation being that a multi-dimensional structure is arranged so that every data item is located and accessed based on the intersection of the dimension members which defined that item; OLAP functionality is characterized by dynamic multi-dimensional analysis of consolidated enterprise data supporting end user analytical and navigational activities.

Claims 6, 9, 15, 25, 33, 36, 37, 38, 40, 41, 42, 43, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingberg in view of Fink.

Regarding Claims 6, 15, 25, 33 and 40, Kingberg teaches said processor maps at least one relationship between said first entity and said second entity of said first plurality of information entities based upon said first physical model (column 7, lines 53 – 55).

Kingberg does not explicitly teach create metadata information for said models; and

save said metadata information in a repository.

Fink teaches create metadata information for said models (see FIG.3A step 302); and save said metadata information in a repository (see FIG.3A step 308).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Kingberg with the teaching of Fink wherein metadata information in a repository is saved when said processor maps at least one relationship between said first entity and said second entity of said first plurality of information entities based upon said first physical model. The motivation being that as additional metadata is identified, object oriented utility routines to support the metadata are created and added to the set of predefined routines. The utility routines are for extracting, loading, cleansing, transforming, and householding metadata in the database management system.

Regarding claim 9, Kingberg teaches a computer (column 28, lines 51 – 53);

an information store, operable to contain said data (see column 28, lines 56 – 57);

a database interface software process that maintains said data in said information store (see column 10, lines 36 - 37 and column 29, lines 20 – 22);

a query/command generator software process that provides access to said data (see column 10, lines 37 – 39, lines 62 – 64 and column 11, lines 1 – 15);

Kingberg does not explicitly teach a metadata repository; a repository interface software process that provides access to said metadata; a scheduler software process; and a user interface software process that controls input to and output from said metadata repository, said database interface software process, said query/command generator software process, and said scheduler.

Fink teach a metadata repository (see column 5, lines 39 – 48);

a repository interface software process that provides access to said metadata (column 4, lines 45 – 46, column 5, lines 61 – 67 and column 6, lines 1 – 6);

a scheduler software process (see column 5, lines 20 – 25); and

a user interface software process that controls input to and output from said metadata repository, said database interface software process, said query/command

generator software process, and said schedule (see column 4, lines 45 – 46 and column 5, lines 45 – 46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Kingberg with the teaching of Fink wherein the system generates a logical data model and a physical data model of a data base, maintain correspondence between the logical data model and a physical data model and create a data warehouse. The motivation being that as additional metadata is identified, object oriented utility routines to support the metadata are created and added to the set of predefined routines. The utility routines are for extracting, loading, cleansing, transforming, and householding metadata in the database management system.

Regarding claim 36, Kingberg teaches modeling a first plurality of information entities, including a first entity

and a second entity, using a first logical model (see FIG.4, column 6, lines 40 – 50);

mapping at least one relationship between said first entity and said second entity of said first plurality of information entities based upon said first physical model (see FIG.6, column 6, lines 59 – 67 and column 7, lines 1 – 9).

Kingberg does not explicitly teach converting said logical model into a first physical model.

Fink teaches converting said logical model into a first physical model (see column 6, lines 41 – 49).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Kingberg with the teaching of Fink wherein the system generates a logical data model and a physical data model of a data base, maintain correspondence between the logical data model and a physical data model and create a data warehouse. The motivation being that as additional metadata is identified, object oriented utility routines to support the metadata are created and added to the set of predefined routines. The utility routines are for extracting, loading, cleansing, transforming, and householding metadata in the database management system.

Regarding claim 37, Kingberg teaches first logical model comprising at least one of a central concept entity, a static attribute entity, a dynamic attribute entity, an activities/events entity (see column 19, lines 60 – 67 and column 20, lines 1 – 23).

Regarding claim 38, Kingberg teaches analyzing said first plurality of information entities using applications
based upon input of said first logical model (see column 6, lines 44 – 49 and column 20, lines 26 – 32).

Regarding claim 41, Kingberg teaches modeling a second plurality of information entities, including a first entity

and a second entity, using a second logical mode (see column 7, lines 32 – 40)

converting said second logical model into a second physical model (see column 8, lines 25 – 31)

mapping at least one relationship among said first entity and said second entity of said second plurality of information entities based upon said second physical model (see column 7, lines 53 – 55).

Regarding claim 42,Kingberg teaches analyzing said first plurality of information entities and said second

plurality of information entities using applications based upon input from said first logical model and said second logical model, said applications deriving new relationships between said first plurality of information entities and said second plurality of information entities (see FIG.4, column 6, lines 40 – 59, column 7, lines 32 – 55 and column 20, lines 26 – 32).

Claims 43 is essentially the same as claim 36 except that it sets forth the claimed invention as a computer product rather than a method for managing information and therefore rejected for the same reasons as applied hereinabove.

Regarding claim 44, Kingberg teaches a processor (see column 29, line 24); and a memory (see column 29, lines 25 – 28);

wherein said processor is operative to model a first plurality of information entities, including a first entity and a second entity, using a first logical model; and thereupon to map at least one relationship between said first entity and said second entity of said first plurality of information entities based upon said first physical model; wherein said first entity and said second entity are stored in said memory (see FIG.4; column 6, lines 40 – 67, column 7, lines 1 – 9, column 18, lines 43 – 46, 60 – 62 and column 29, line 24).

Kingberg does not explicitly teach said processor is further operative to convert said logical model into a first physical model.

Fink teaches said processor is further operative to convert said logical model into a first physical model (see column 6, lines 41 – 49).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Kingberg with the teaching of Fink wherein the system generates a logical data model and a physical data model of a data base, maintain correspondence between the logical data model and a physical data model and create a data warehouse. The motivation being that as additional metadata is identified, object oriented utility routines to support the metadata are created and added to the set of predefined routines. The utility routines are for extracting, loading, cleansing, transforming, and householding metadata in the database management system.

Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kingberg in view of Fink and further in view of OLAP.

Regarding claim 39, Kingberg or Fink do not explicitly teach said applications comprising at least one of statistics, a report generator, an On Line Analytical Processing (OLAP) package, and a data mining application.

OLAP teaches said applications comprising at least one of statistics, a report generator, an On Line Analytical Processing (OLAP) package, and a data mining application (see pages 1 – 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Kingberg and Fink with the teaching of OLAP wherein users gain insight into the meaning contained in databases by using OLAP objective of multi-dimensional analysis. The motivation being that a multi-dimensional structure is arranged so that every data item is located and accessed based on the intersection of the dimension members which defined that item; OLAP functionality is characterized by dynamic multi-dimensional analysis of consolidated enterprise data supporting end user analytical and navigational activities.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred I. Ehichioya whose telephone number is 703-305-8039. The examiner can normally be reached on M - F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached on 703-305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-303-3900.

Fred Ehichioya
May 31, 2003

SHAHID AL ALAM
PATENT EXAMINER
Primary